Overview

Introduction to PARTS Program
Joseph Kolly
Chief Safety Scientist, NHTSA, and Co-Chair of PARTS Governance Board

PARTS Phase 2 Overview
Paul Teicher
Senior Policy Analyst, U.S. Department of Transportation

Industry Perspective
Tim Czapp
Senior Safety Manager at FCA, and Industry Co-Chair of the PARTS Governance Board
Overview

Advanced Driver Assistance Systems Effectiveness Research
Schuyler St. Lawrence
Senior Engineer at Toyota, and Co-Chair of ADAS Effectiveness Work Group

PARTS Roadmap
Michelle Michelini
Senior Manager of Global Vehicle Safety Analytics at GM, and Co-Chair of PARTS Roadmap Working Group
PARTS is a Unique Public-Private Partnership (PPP) for Safety Analysis
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Pools real-world data, information, and resources for collaborative safety analysis and discovery that cannot be accomplished individually.
PARTS is a Unique Public-Private Partnership (PPP) for Safety Analysis

Goal: Gain real-world insights into safety benefits and emerging safety opportunities that can improve performance of advanced safety technologies
PARTS is a Unique Public-Private Partnership (PPP) for Safety Analysis

Focus on ADAS now to lay the foundation for automated driving systems, connected vehicles, and other real-world advanced technologies in the future
PARTS Phase 1

Achievements

• Trusting and collaborative working relationships formed and demonstrated

• Partners voluntarily shared sensitive data

• Aggregated, standardized & analyzed disparate data

• Agreement of partners to move forward
PARTS Phase 2

Overview

• U.S. DOT funded Phase 2

• $2.1M contract between the MITRE Corporation and U.S. DOT

• 2-year period of performance

• Began September 2020
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• Expand scope and complexity of analyses performed
• Expand membership
• Mature governance & management
• Lay foundation for Phase 3
### Overview

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- Mature governance & management
- Lay foundation for Phase 3

### Success Criteria

Meaningful results that are communicated and applied
PARTS Participation, Operations, and Value Proposition

2020
- Organizing for Scale

2021
- Operating at Speed
- Planning for Growth

Phase II
Eight Automakers
70% Market Share
PARTS Participation, Operations, and Value Proposition

ALL : ALWAYS :
Collaboration
Expertise
Trust

IN :
Crash Data
Funding

OUT :
Aggregated Results

IN :
OEM Data & Decoding

OUT :
Benchmark Insights

IN :
Data Stewardship
Analysis
Large Partner-Provided Dataset Enabling Meaningful Results

Phase 1
- All police-reported crashes
- 4 million crashes
- 9 states
- 10 million vehicles in study
- 26 models
- 4 vehicle segments
- Model Year 2015 – 2017

Phase 2
- Start with 9 states and expanding to 15-plus
- 40+ million vehicles
- 90-plus models
- 7 vehicle segments
- Model Year 2015 – 2021
Phase 2 Study: Research Objectives

• What is the overall effectiveness of ADAS features against relevant crashes?

• What factors influence ADAS feature effectiveness and to what extent?

• What combination of ADAS features contribute to the reduction of fatalities, injuries, and crashes?
Phase 2 Study: Research Objectives and ADAS Features

- What is the overall effectiveness of ADAS features against relevant crashes?

- What factors influence ADAS feature effectiveness and to what extent?

- What combination of ADAS features contribute to the reduction of fatalities, injuries, and crashes?

- Forward Automatic Emergency Braking
- Forward Collision Warning
- Pedestrian Detection Warning
- Pedestrian AEB
- Lane Departure Warning
- Lane Keeping Assistance
- Lane Centering
- Blind Spot Warning
- Blind Spot Intervention
Methodological Approach

Two Methods:

1. **Odds-Ratio Comparison (Quasi-Induced Exposure)**
   - Compare the rates of system-relevant crashes/control crashes for equipped and unequipped vehicles
   - Logistic model verifies significance of estimated effects and impact of covariates

2. **Crash Risk Rate Comparison**
   - VIN-level exposure measured based on time-in-service
   - Relevant crashes identified from PAR data fields
   - Metrics used: crash rate ratio and % reduction in crashes

Aggregate results to be shared publicly later in 2021
## PARTS Evolution

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<th>2020-2022</th>
<th>2022-2025</th>
<th>2025-2030</th>
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<td><strong>Foundational Stage</strong>&lt;br&gt;(Phase 2)</td>
<td><strong>Expanding Stage</strong></td>
<td><strong>Advancing Stage</strong></td>
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Increase the depth and breadth of analyses by expanding to most U.S. passenger vehicles and integrating new datasets – all while building enabling capabilities, maturing technical environment, and expanding public presence of the partnership.
PARTS Evolution

2020-2022

Foundational Stage
(Phase 2)

2022-2025

Expanding Stage

2025-2030

Advancing Stage

Become a leading source for accelerated safety insights through rapid collection of data directly from vehicles to provide a better window into emerging issues and traffic safety.
PARTS Evolution

As PARTS integrates new datasets and matures capabilities, it will answer increasingly complex and nuanced research questions.

Foundational Stage (Phase 2)
- ADAS Feature-Level Crash Reduction Effectiveness
- Proofs of Concept (POCs)

Expanding Stage
- ADAS Feature Attribute Crash Reduction Effectiveness
- New datasets integrated
- Prototypes to begin using telematics data

Advancing Stage
- Accelerated Safety Insights
More Information on PARTS

Website: NHTSA.gov/PARTS

Governance Board Co-Chairs: Joseph.Kolly@dot.gov
Tim.Czapp@fcagroup.com

Email: PARTS@mitre.org

PARTS, short for Partnership for Analytics Research in Traffic Safety, is a partnership between automakers and the U.S. Department of Transportation's National Highway Traffic Safety Administration in which participants voluntarily share safety-related data for collaborative safety analysis. The goal of this government-industry initiative, which is operated by an independent third party, is to gain real-world insights into the safety benefits and opportunities of emerging advanced driver assistance systems and automated driving systems.

Current Study: What is the effectiveness of advanced driver assistance systems in real-world scenarios?

40 M VEHICLES
94 VEHICLE MODELS INCLUDED
7 MODEL YEARS INCLUDED